

Claims:

1. A method for processing flue gas scrubber material flows, in which method flue gas is scrubbed with a washing fluid containing calcium-based absorbent to absorb sulphur oxides from the flue gases and the formed gypsum slurry is directed from the flue gas scrubber (1) to the separator (5), in whose separation point the gypsum is separated from the washing fluid, and from which the gypsum and washing fluid are taken out as separate material flows, **characterized** in that from the flue gas scrubber (1) the washing fluid is directed to a tank (7, 13) located before the separating point of the separator or after the separation point of the separator, in which tank foam is separated from the washing fluid as its own phase and taken out from the tank (7, 13).
2. The method according to claim 1, **characterized** in that the foam is taken out from the surface of the tank (7, 13).
3. The method according to claim 2, **characterized** in that the foam is taken out as overflow.
4. The method according to claim 2 or 3, **characterized** in that in the tank (7) the washing fluid is directed away from the foam towards its own outlet by means of vertically extending baffle structures, which prevent the direct horizontal flow of water.
5. The method according to any of the preceding claims, **characterized** in that the foam taken out of the tank (7, 13) is combined with the gypsum material flow.
6. The method according to any of the preceding claims, **characterized** in that the washing fluid is recycled from the tank (7, 13) back to the flue gas scrubber (1).
7. The method according to claim 6, **characterized** in that the washing fluid is directed from the tank (7, 13) back to the flue gas scrubber (1) via at least one new foam removal phase.

8. The method according to any of the preceding claims, **characterized** in that gypsum is separated from the washing fluid with a hydrocyclone, whose excess is directed to the tank (7), wherein foam is separated from the fluid.

9. An apparatus for processing flue gas scrubber material flows, in which apparatus there is a flue gas scrubber (1) using a calcium-based absorbent, an outlet line (D) for directing the gypsum-containing washing fluid out of the scrubber, as well as a separator (5) having a separation point for separating the gypsum and the washing fluid, **characterized** in that in the direction of flow of the washing fluid there is a tank (7, 13) before the separation point of the separator (5) and/or after the separation point of the separator (5), in which there are means for separating foam from the upper part of the tank and an outlet (12) or an outlet point for removing clean washing fluid from foam.

10. The apparatus according to claim 9, **characterized** in that the means for separating foam comprise an overflow (11, 21) for directing the foam on the fluid surface of the tank (7, 13) away.

11. The apparatus according to claim 10, **characterized** in that in the tank (7) there is one or more vertically extending baffle structures between the overflow (11) and the outlet (12) or the outlet point, such as a baffle plate (9, 10) or the like.

12. The apparatus according to claim 11, **characterized** in that the baffle structure (9) is located between said overflow (11) and tank outlet (12) or outlet point, and is directed from the bottom of the tank (7) upwards defining the fluid surface level in the tank.

13. The apparatus according to claim 12, **characterized** in that the second baffle structure (10) is located between the first baffle structure (9) and the overflow (11), extends above the first baffle structure (9), and extends at the lower end to a distance from the bottom of the tank (7), thus leaving a flow outlet free for the fluid to flow towards the tank outlet (12) or the outlet point.

14. The apparatus according to claim 9, **characterized** in that the means for foam removal in the tank (13) before the separating point of the separator (5) comprise a spray device or the like for directing the foam away from the tank (13) fluid surface.

15. The apparatus according to any of the preceding claims 9 to 14, **characterized** in that after the tank (7) following the separating point of the separator (5) there is another tank (15) having means for directing the foam away from the upper part of the tank and an outlet for removing clean washing fluid from the foam.

16. The apparatus according to any of the preceding claims 9 to 15, **characterized** in that an overflow pipe, whose water seal (18) is located outside the scrubber below the overflow point (17), has been connected to the scrubber (1).

17. The apparatus according to claim 16, **characterized** in that in the water seal (18) there is a water connection (20), through which water can be supplied to the water seal.